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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,082	05/12/2006	Marc Charles Berckmans	19790-009US1	6371
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EXAMINER KRAUSE, ANDREW E				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/579,082

Applicant(s)

BERCKMANS ET AL.

Examiner

ANDREW KRAUSE

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____
- Paper No(s)/Mail Date 7/3/06

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 17-19, and 21** provide for the use of a reactor, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17-19, and 21 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 3, 4, 6-14,16-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Idaszak (US #4,021,927, hereafter '927).

5. '927 discloses a method for modifying starch or starch derivatives (column 3, lines 47-50) comprising:

- a. Introducing a continuous flow of starch substrate, gas, (column 3, lines 57-65) and optionally, one or more reagents (column 5, lines 35-45), into a reactor,
- b. Wherein the starch substrate has a moisture content between 10-12% by weight (column 4, lines 10-20)
- c. A residence time in the reactor of less than 1 hour and is heated to between 125 and 380° F (column 8, lines 10-20),
- d. Characterized in that the starch substrate and the gas are introduced into the reactor in opposing directions (column 3, lines 47-65 disclose that this preferably occurs counter-currently) and in that the reactor has a tubular body comprising a rotating shaft upon which is disposed one or a plurality of blades (figures 2 and 3 disclose the tubular body, column 5, line 55-column 6, line 6 disclose a rotating shaft within the reactor with a plurality of blades).

6. **Regarding claim 3**, the starch is disclosed to have 10-12% moisture (column 4, lines 10-20)
7. **Regarding claim 4**, the starch substrate is disclosed to be a native starch or a starch derivative (column 7, lines 45-55).
8. **Regarding claims 6-7**, the reagent disclosed is an acid (column 5, lines 35-45), specifically hydrochloric acid, which is a mineral acid.
9. **Regarding claim 8**, the reagents are added in an amount between 0.001 to 0.10 by weight (column 8, lines 1-7).
10. **Regarding claim 9**, it is disclosed that the hydrochloric acid may be added as a gas (example 1).
11. **Regarding claim 10**, the acid is added to the starch prior to being added to the reactor (column 7, lines 55-60).
12. **Regarding claim 11**, the residence time is disclosed to frequently range from 10-30 minutes (column 8, lines 15-17).
13. **Regarding claim 12**, the temperature of the reactor is disclosed to be within a temperature range of 125-380° F (column 8, lines 12-15).
14. **Regarding claim 13**, the gas introduced to the reactor can be air, steam, or nitrogen (column 8, lines 27-32).

15. **Regarding claim 14**, '927 discloses a method for preparing a highly soluble starch comprising introducing a continuous flow of starch substrate, gas and a mineral acid into a reactor (column 3, lines 57-65, column 5, lines 35-45, example 1), wherein the starch substrate has a moisture content between 10 and 12% by weight (column 4, lines 15-20), a residence time in the reactor of between 10 and 30 minutes and is heated to between 170 and 375° C (column 8, lines 12-17), characterized in that the starch substrate and the gas are introduced into the reactor in opposing directions (column 3, lines 47-65 disclose that this preferably occurs counter-currently) and that the reactor has a tubular body comprising a rotating shaft upon which is disposed one or a plurality of blades (figures 2 and 3 disclose the tubular body, column 5, line 55-column 6, line 6 disclose a rotating shaft within the reactor with a plurality of blades).
16. **Regarding claim 16**, the highly soluble starch is 94.5% soluble in 25° C water (example 1, test #4050).
17. **Regarding claim 17**, '927 discloses a reactor for the modification of starch, said reactor having a tubular body comprising:
- e. a rotating shaft upon which is disposed one or a plurality of blades (figures 2 and 3 disclose the tubular body, column 5, line 55-column 6, line 6 disclose a rotating shaft within the reactor with a plurality of blades), and

- f. At least two inlets, one for the introduction of starch substrates, and optionally, one or more reagents, and one for the introduction of a gas, characterized in that the inlets are positioned such that the starch and gas are introduced into the reactor in opposing directions (the starch flows in through inlet 14 , and the fluidizing gas enters through a separate inlet, 46. The starch is preferably added countercurrently to the fluidizing gas (column 3, lines 57-65).
18. The application '927 discloses using said reactor to modify starches.
19. **Regarding claim 19**, '927 discloses using the reactor for dextrinisation (column 7, lines 45-50).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
22. **Claims 2,5,15, 18,20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Idaszak (US #4,021,927, hereafter '927).
23. **Regarding claims 2,18, 20, and 21**, '927 discloses the method according to claim 1 and the use according to claim 17, but fails to disclose the tip speed of the blades as falling within the claimed ranges. '927 discloses using a tip speed of about 1 m/s (derived from the rpm and diameter given for the lower agitator, column 13, table). This speed is substantially close to the speed of the instant claims that one having ordinary skill in the art would have expected the process to be prima facie obvious, and to produce materials having the same properties (*Titanium Metals Corp.*, 227 USPQ 773 (CAFC 1985).)
24. **Regarding claim 5**, '927 discloses the method of claim 1. '927 fails to explicitly disclose that the starches are added to the reactor in powdered form. However, '927 discloses that the starches introduced to the reactor are starches such as cornstarch and potato starch (column 7, lines 45-55). These starches are well known in the art to generally come in powdered form. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to add starch to the reactor in a powdered form, since starches like the ones used in '927 are well known to come in

powdered form, and there is no suggestion to use the starch in another form. In other words, if one having ordinary skill in the art at the time of the invention were to practice the invention of '927 absent instruction to change the form of the starch to one other than a powder, they would have used starches like cornstarch or potato starch in powdered form, because the art accepted definition of these starches provides for them being in powdered form.

25. **Regarding claim 15,** '927 discloses the method of claim 14, but fails to explicitly disclose that the reaction occurs under alkaline conditions. However, '927 discloses that adjusting the pH (the alkalinity or acidity) of the reaction conditions can allow practitioners of the invention to choose if a certain agent will bleach or oxidize a starch. Therefore it would have been obvious to one having ordinary skill in the art to adjust the alkalinity of the reaction conditions for the intended application, since it has been held that determining the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. EP 1281721A1 discloses a similar method of modifying starch or starch derivatives, but fails to explicitly disclose that the starch substrate and gas are introduced into the reactor in opposing directions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW KRAUSE whose telephone number is (571)270-7094. The examiner can normally be reached on 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW KRAUSE/
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794